

[HIGH-PERFORMANCE TWO-PHASE FLOW EVAPORATOR FOR HEAT DISSIPATION]

Abstract

A high-performance two-phase flow evaporator is disclosed to include an electronic device, a casing, a heat sink provided at the top side of the casing and defining with the casing an enclosed chamber, a working fluid contained in the enclosed chamber, and a heat conducting member with top grooves formed of heat transfer material ($k > 80 \text{ W/m} \cdot \text{K}$) in the bottom side of the casing in contact between the electronic device and the working fluid for transferring heat energy from the electronic device to the working fluid to heat the working fluid to give off steam so that heat energy is quickly dissipated from the electronic device into the outside open air through the heat sink and steam is quickly condensed into water upon heat exchange and returned to the heat conducting member by means of gravity.